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SALPINGITIS. * †

BY WALTER LENEHAN, M. D., NASHVILLE, TENN.

INTRODUCTION.

Of all diseases to which the human frame is heir, these are, to my mind, the most distressing. Distressing because they involve organs sacred to the individual, and of the greatest importance to the community. There is no sadder picture than a young and beautiful girl, who leaves her home with the ruddy glow of youth in her face, to become, in a few months, a pale, wan sufferer. Grieving by day and by night because the one greatest object of her life—to become a mother—cannot be realized. Why? Follow me, and I shall try to show you.

Salpingitis, with its complications and sequelae, is one of the most widespread of all diseases. Fortunate, indeed, is the woman who reaches the menopause, and escapes its baneful influ-

ences. Then, too, it usually attacks a woman at about a time when she is the most useful, and soon makes a mental and physical wreck of her. Therefore, let me implore you not to look too lightly on these troubles, and, as is too often done, say the woman has female troubles, and prescribe some simple wash, suppository, or perhaps a tonic, and think no more about the matter.

CLASSIFICATION.

First, let us take up our study by classifying these diseases. The most satisfactory classification which I have seen is that given by Orthmann, which is as follows:

1. Catarrhal salpingitis with its varies; simple, diffuse, interstitial, hemorrhagic, follicular.
2. Purulent salpingitis, which may be septic, gonorrheal, or tubercular.
3. Haemato-salpinx.
4. Hydro-salpinx.
5. Pyo-salpinx (or purulent cystitis salpingitis).

Pozzi makes his classification according to whether or not there is cyst formation thus:

*Read before the Tennessee State Medical Society.

†Appeared also in the *Charlotte Medical Journal*, May, 1902.

Other classifications, according to variety, etc., given by some authors, are confusing, hence we shall not include them.

ETIOLOGY.

The chief cause of salpingitis is, without doubt, inflammation of the uterus. Specific and other inflammations are spread by continuity of mucous surface. This is held to be the only method of infection by Schroder. Championniere advances the idea that infection might be spread by means of the lymphatics, and this view must not be ignored. If we bear in mind the anatomy of the lymphatic system of the pelvis; and also the fact that adhesions are very often found, binding the fundus of the uterus to the tubes and ovaries, this theory cannot but help appeal to us. Moreover, I quote from Pozzi, "Poiriere has shown us that these adhesions are almost entirely composed of lymphatics which connect the subendothelial uterine plexus with the lymphatics of the appendages. These adhesions are without doubt the result of the action of a previously existing endometritis upon the deep lymphatic plexus of which the subendothelial plexus is merely a continuation. Inflammation from the body of the uterus may be carried along this channel to the tubes and ovaries, especially if some new pathological influence comes to accelerate the process."

Thus, we see how easy it is for an inflammation to spread to the tubes and ovaries, and it has been my observation, and most of the authorities clearly state it, that, if a catarrhal endometritis exist for some time, the tubes are always affected. The symptoms of endometritis may be so severe, and those of salpingitis so mild that we will over-

look the latter; or, on the other hand, our attention may be directed solely to the tubes, and we will not recognize the existent endometritis.

The frequency of endometritis quite accounts for that of salpingitis. The statement is only emphasized by the fact that a temporary endometritis is so frequently followed by a permanent lesion of the tubes. Winckel found out of 575 female cadavers, 182 with lesions of the appendages. Arthus Lewers found 17 cases of hydro, pyro, or haemato-salpinx, in 100 autopsies performed at the London Hospital. Galabin, from 1883-86, found in 302 autopsies performed in Guy's Hospital, 12 cases, or 4 per cent. Of this, Lawson Tait remarked "Patients in this hospital come from a class more well-to-do than those of the London Hospital, and gonorrhoeal and puerperal infection are consequently less frequent." Martin found in his clinic, from September 15, 1886, to December 31, 1894, that out of 20,605 gynaecological affections, there were 1,363 cases of adnexal troubles; and out of 2,078 tabulated cases of tubal and ovarian diseases, 279 were due to gonorrhoea.

Gonorrhoea plays a most important part in the causation of tubal diseases. Many years ago, Postello compared the extremity of the tube to the epididimus, but it remained for Bernutz to state the analogy between the tubo-ovaritis of gonorrhoeal origin in the female and epididimorchitis in the male. Westermarck was, however, the first to find the gonococcus in the pus from a gonorrhoeal salpingitis. Since then most conclusive observations have been made, especially by Schmidt, Carstens, Zweifel, Witte, Wertheim, Schauta and Prochownick. Martin reports the

cases in which he found the gonococcus, together with those cases observed by Wertheim, Charrier, Prochownick and Schauta to be 76. "In France, Hartman and Morax found the gonococcus 13 times in 33 cases of suppurative salpingitis, and Jayle 4 times out of 30 cases."

Reymond states that the germ is found most frequently upon the surface of the mucosa. It lies in a purulent layer composed of a great number of leucocytes and desquamated epithelial cells. Wertheim has found the germ in the mucosa and muscularis.

It is probable, that in young married women, old chronic cases of gonorrhoea (gleet) which are considered harmless, is the chiefest cause of trouble. How many young women have you seen to marry, and soon to have a slight endometritis with a leucorrhoea established? We, in a careless way, without the proper investigation, attribute the trouble to too frequent intercourse, perhaps; and doom her to a life of suffering and to sterility, because of our ignorance.

One of the most frequent causes of tubal diseases, is puerperal infection. Martin, in the 20,605 gynaecological cases observed by him in his clinic, found 374 cases from this cause. Infection follows labor, or more frequently abortions under septic conditions. If we have a post-abortum endometritis, with retention of blood-clots and fragments of membranes, we should always fear tubal complications. If this material become gangrenous and remain in the uterus for several days, we are sure to have a metro-salpingitis. The streptococcus is the infecting agent. It is usually found free in the pus between the cells. It may be found in the mucosa and throm-

bosed vessels. The staphylococcus may rarely be found, but is invariably associated with the streptococcus.

If the woman have gonorrhoea at the time of her labor, we will have a mixed infection, puerpero-gonorrhoeal. But Pozzi believes that in these cases the post-partum elevation of temperature is due to the streptococcus, "whose development has been favored by the gonococcus."

Gynaecologic and obstetric examinations and operations are another fruitful source of infection. The uterine sound is a most dangerous instrument. A dirty finger; and even intra-uterine washings may carry infecting germs. It must be borne in mind that a thorough sterilization of the hands, vulva, vagina, and instruments is not a sufficient guarantee against infection, for the cervix normally contains numbers of germs which may, under favorable circumstances, become pathogenic.

We sometimes find a tubercular inflammation of the tubes. This is usually found co-existent with tubercular inflammations of other parts of the genital tract; but tubercular salpingitis has often been found as an isolated lesion. Conheim and Verneuil state that the point of entrance of the bacillus tuberculosis is very often the genital tract. It is also possible that the germs are introduced into the circulation through the respiratory and digestive tracts, and settle on the inflamed appendages as the point of least resistance. Mr. Lawson Tait has shown us that malformations or congenital atrophy of the tubes would also cause a predisposition of the affected tubes to tubercular invasion. Freund has laid especial stress on this point. I think it extremely doubtful

if infection is ever carried in by means of the semen. This could, perhaps, be possible where there was some tubercular infection of the genital tract of the male, but such cases must be relatively rare.

Occasionally the tubes may be infected through the intestinal tract. This infection comes from an old intestinal lesion (enteritis or typhoid ulceration). The infection might be spread by adhesions of the gut, to the appendages; or by lymphatic channels, which Clado has pointed out, connect the ovary with the coecal appendix. The infecting agent here is the bacillus coli communis, and perhaps the bacillus typhosus. We must not, in this connection, forget the possibility of a mixed infection; and Raymond states that, in the presence of the bacillus coli communis, the micro-organisms previously existent in the tubes, seem to acquire increased virulence.

The pneumonococcus has been found in cases of salpingitis, but in no case

was it found that the patient had had pneumonia. Frommel and White found the pneumonococcus in salpingitis of puerperal origin, while Zweifel and Gironde found it in gonorrhoeal salpingitis. It is interesting to note that the cases in which pneumococci have been found were all unilateral.

Rare cases have been reported in which the causative factor seemed to be the eruptive fevers, especially scarlet fever and small pox.

Salpingitis may be produced by flexion, myoma, or carcinoma of the uterus, and perhaps by stenosis of the os, with retention of mucous in the cavity. Garrigues mentions also exposure to cold, violent exercise immediately before menstruation, or to coition as being causative agents.

Syphilitic salpingitis will not bear investigation, and the case in which the actinomyces was the infecting medium is a pathological curiosity.

PATHOLOGY.

- | | | |
|------------------------------|--|---|
| 1. Non-cystitic salpingitis. | { a. Acute catarrhal.
b. Acute purulent.
c. Chronic parenchymatous. | { Hypertrophic
or vegetative
variety.
Atrophic or
sclerous variety. |
| 2. Cystic salpingitis. | { a. Hydro-salpinx, or serous.
b. Haemato-salpinx, or haematic.
c. Pyo-salpinx, or purulent. | |

First, let us take up acute catarrhal salpingitis. In this condition, we find the tube swollen to about the size of the little finger, or possibly larger. This is due both to an infiltration of the wall of the tube, and of the sub-serous tissue. The swelling is cylindrical in shape, and the tube is found twisted and bent because its lower border is bound to broad ligament. The fimbriae are usually found folded up, yet they do not completely obliterate the

opening. They may be patulous and turgescient. Pozzi remarks: "This permeability of the fimbriated extremity I consider to be pathognomic of inflammations, which are simply catarrhal, or in other words superficial and curable, not calling for extirpation of the organ." The tubes are often bound to the ovaries adjacent structures by thin, filamentous adhesions.

The tube is of a pinkish color on its external surface, and tends to deepen

in color near the fimbriated extremity. On section, we find that the normal folds of mucous membrane are hypertrophied, of a pinkish or silvery gray color, and sometimes covered with mucous.

Microscopically, we find that the mucous membrane especially shows signs of disease. The folds are covered with lateral, thick, club shaped, and newly formed vegetations, many of which anastomose at the internal extremity. These vegetations are composed of a vasculo-cellular frame work which is infiltrated with round cells, and is in places covered by a layer of columnar, ciliated epithelium. Most frequently, only a hyperplasia of the substance of the fibrous and muscular coats is found.

Acute purulent, non-cystic salpingitis: Freund claims that there are normally two forms of Fallopian tubes, the one almost straight, and of normal calibre; the other twisted, and with diminished calibre in places, the remains of an infantile condition. He claims that in the one, tubal troubles develop rapidly and tend to a spontaneous cure, while in the other, because of its constricted condition, suppurative infiltration of the walls of the tube is produced, and this is sufficient to close the uterine orifice. Thus we have a pyo-salpinx produced from an acute purulent salpingitis.

In acute purulent salpingitis we find externally all the evidences of an intense inflammation. The tube is swollen, twisted, and knotty. The fimbriae adhere to one another and close the ostium abdominale. The ostium uterinum is permeable. If we open the tube, we find the cavity filled with creamy pus. The mucous membrane presents a downy appearance, and is

of a grayish color.

Pozzi describes the microscopic appearance so beautifully that I shall give his words: "Under the microscope, a transverse section shows very thick reduplication covered with anastomosing vegetations, forming a system of primary and secondary folds, enclosing irregular cavities that look like glands. This thickening is due to the infiltration of migratory cells in the connective tissue. The ciliated cells are destroyed, and the epithelial cells are changed in shape, becoming cubical or flat, and preserving their normal shape only in the sinuses, whose pouch-like endings are lined with a basement membrane of columnar cells which still further increases their resemblance to glands. The whole thickness of the wall is also infiltrated with these round migratory cells, and the blood vessels are dilated." This condition may be spontaneously cured by the tube becoming indurated; that is by the formation of embryonic connective tissue. This, however, is the exception, and the case either becomes chronic or a pyosalpinx is produced.

Chronic parenchymatous salpingitis: In this condition, the vegetations which were at first isolated coalesce and form an embryonic tissue, which lines the walls of the tube, and extends into the lumen in the form of papillomata, thus diminishing the calibre of the tube. The pus disappears, and these vegetations become organized. We usually find a sclerotic ovary or a periovaritis associated with this form. We find the tube thickened, hard and corded. It is bound down by strong adhesions. I should also add that, as a rule, this is a bilateral disease, whereas, we may find that an acute lesion is unilateral.

The lesions are not limited to the mucous membrane, but the whole wall of the tube is involved; especially the parenchyma. The ostium abdominale is always obliterated, but the uterine orifice is usually open. The tube often become impermeable, however, from constrictions. This is the form of salpingitis which some authors call interstitial.

In chronic parenchymatous salpingitis, we recognize two anatomical varieties—hypertrophic and atrophic. In the hypertrophic variety, we find the tubes somewhat enlarged, and of a fleshy consistency. It is of a purplish or dark red color. On section we find either a hypertrophy of the muscular tissue or a thick coat of newly formed connective tissue. The lumen is filled with a pulpy substance which is composed of mucous membrane, the epithelium of which is greatly changed. This substance is of a brilliant silvery color.

The blood vessels may be much dilated, and there may be found a number of haemorrhagic spots on the walls of the tubes. Sawinoff has demonstrated that there exists a perineuritis which is caused by compression of the nerve filaments.

In the atrophic variety we find the tube contracted. The cellular infiltration of the walls of the tube has been reabsorbed, and replaced by cicatricial tissue. Pozzi remarks "that this is, probably a more advanced state of the hypertrophic pacy-salpingitis which has gone on to cirrhosis of the Fallopian tubes. "The fibrous tissue takes the place of the muscularis, causing the tube to contract, and, in advance cases, to become a hard and impermeable cord. The epithelial lining of the tube is destroyed. The follicular salpin-

gitis described by Orthmann and others is distinguished by a number of cystic cavities in the walls of the tube, but, as this condition is common to all inflammations of the tubes, it should not receive a special classification.

Pyo-salpinx: Here we find both extremities of the tube closed, though we may occasionally find the uterine opening permeable. The tube is dilated about two thirds of its length. Rarely is the whole tube dilated.

Usually the first half inch or inch next the uterus remains of normal size. Here the tube may be twisted on itself. The whole tube is hardened. We often find the ovary adherent to the ampulla; and we frequently find adhesions binding the tube and ovary down to the cul-de-sac. This frequently causes displacements of the uterus.

The tube varies in size, sometimes attaining the dimensions of a foetal head. It is frequently curved upon itself. Externally, it presents a yellowish-white appearance. The walls vary in thickness. On section, we find the internal surface velvety, and the cavity filled with a yellowish, creamy pus, which may be fetid.

Microscopically, we find the internal surface covered with the same branching vegetations, but much thicker than those of acute catarrhal salpingitis, because of the greater infiltration of round cells. But a single layer of columnar epithelial cells covers them, and this is also found in the bottom of the spaces which lie between the villousities. The deep layers of the mucosa contain many fusiform cells, but the more superficial layers are greatly infiltrated with round cells. The blood and lymphatic channels are engorged.

Pyo-salpinx is sometimes found associated with fibroma or carcinoma of the uterus.

If the pyo-salpinx be tubercular, we may find the characteristic tubercular granulations upon the neighboring peritoneum, but more often, the diagnosis will have to be made by the microscope, which will show the tubercle, with its zone of nucleated cells, surrounding the giant cells, and the bacillus tuberculosis.

Hydrosalpinx or tubal dropsy: Bland Sutton believes that this is often an advanced form of pyo-salpinx. He bases his belief on the following points:

1. Hydrosalpinx is not found in acute cases.

2. In many chronic cases hydrosalpinx is found on one side of the uterus, and a progressive pyo-salpinx on the other.

3. The ampulla of the tube will sometimes be dilated into a hydrosalpinx, and the isthmus contains pus.

4. The fluid contained in a hydrosalpinx will sometimes be colorless, but the recesses of the tube contain caseous material and cholestrine.

5. The dilated tube in hydrosalpinx may, as in pyo-salpinx, communicate with an enlarged ovarian follicle to form a tubo-ovarian cyst.

He further describes the mode of development of a hydrosalpinx thus:

"In cases of salpingitis sufficiently severe to occlude the ostium, the tube is, after the subsidence of the inflammation, in a condition of a blocked ureter; there is no escape for the fluid which is excreted by the glands in its walls, or for the fluid which passively exudes into its cavity. It consequently forms a cyst by retention."

The walls of tube are smooth and papyraceous. They are very thin; the

mucosa and muscularis are found in an atrophied state. They are of a bluish-white color. The shape of the tube is characteristic; it resembles a legume with the ends somewhat blunt. The ovary occupies the concave border. As a rule, a hydrosalpinx is about the size of a small orange. The tube is closed at the uterine orifice. It is filled with a fluid which has a yellowish or greenish tinge, due to the presence of cholesterine, and may contain blood or a little pus.

Haemato-salpinx: We recognize two varieties of haemato-salpinx.

1. This form is more frequently found. It follows a catarrhal inflammation. We find the tube only moderately dilated. The wall is infiltrated and is only moderately thickened. The ostium abdominale is closed, but the uterine orifice is usually open. The tube is filled with fluid blood. As a rule, however, the trouble is only temporary, and the blood is reabsorbed.

2. Here, we may find an extreme dilatation of the tube. The sac resembles that of a pyo-salpinx. The tube wall is infiltrated, and is greatly thickened. It is bound down by strong adhesions. Microscopically, we find a milder grade of inflammation than we find in pyo-salpinx. The mucosa contains an abundance of fusiform cells, which in some of the folds seem to rise perpendicularly from the deeper layer. The epithelial coating of the tops of these folds is usually wanting. We may find in intervals between them a dense network of capillary filled with blood. These can be traced almost to the surface of the mucous membrane. We may find small parenchymatous hæmorrhages in places.

The tube is filled with a stratified bloodclot, the centre of which is filled

with broken down blood products; or sometimes a syrupy chocolate colored blood. We often find a clear liquid material which is an admixture of blood and pus.

Of this variety, Pozzi remarks: "For the formation of the sac, I think we must presuppose a tubal pregnancy arrested in its development by the death of the fœtus, which is reabsorbed, or a previous pyo-salpinx which has obliterated the uterine opening and thickened the walls at the same time that they became dilated."

Of hæmato-salpinx, Bland Sutton says: "In all the cases that have occurred in my own practice in which dilated Fallopin tubes contained blood clot, a careful examination of the parts has led to the detection of an embryo, an apoplectic ovum, or chronic villi."

I may add before leaving the pathology of this disease, that hæmato-salpinx is often found associated with fibromata, and is due to a hæmorrhagic metro-salpingitis.

SYMPTOMS.

The symptoms of salpingitis vary with the extent, virulence, acuteness and mechanical conditions of the disease. The milder catarrhal inflammations may have very few symptoms. On the other hand, a dangerous puerperal inflammation may present no symptoms other than slight recurrent fever, and emaciation.

The most constant symptom is pain. This even may not amount to real pain. There may be a dull aching or burning sensation. This may be aggravated by local pressure, exertion, defecation, or vaginal exploration. Sometimes the pain is of a colicky character. It is usually felt in one or both iliac fossae, and in the sacral region. It

radiates upward to the epigastrium, and downward to the thighs. It is not infrequently accompanied by gas-tralgia and vomiting. The congestion of the menstrual period most often aggravates the pain, producing dysmenorrhœa. If only one side is affected, the pain may sometimes be felt in the opposite side. On account of the pain, dysperunia is a very prominent symptom.

Menorrhagia and metrorrhagia are fairly constant symptoms. Amenorrhœa may be a symptom, and should always excite a suspicion of tuberculosis.

Luecorrhœa is a very common symptom. We may have various mechanical symptoms, such as painful urination and defecation, pelvic neuralgia, difficulty and pain on walking and standing, and various reflex symptoms.

The general health of the patient usually suffers. She loses flesh; often has fever; becomes fretful and nervous; and suffers from loss of flesh and energy.

We may find all of the uterine syndromata associated. Sterility is the rule.

Physical signs:—By bimanual examination, we detect, in the acute cases, the tube in a hardened, twisted, thickened condition. It is tender to the touch. It may be fixed or movable. The ovary may be found enlarged and tender. In cases which have existed for some time, we find a boggy, resistant, pear-shaped mass, hanging from the side of the uterus, and filling the vault of the vagina. This mass may be found bound down to the cul-de-sac. It may be either bilateral or unilateral. If unilateral, we may find the uterus pushed over to the opposite side; if bilateral, we find that the mass either occupies a position behind the

uterus, lying in the cul-de-sac, and pushed the uterus forward, or it is anterior to the uterus, and pushes it backward. The uterus is usually somewhat enlarged, and may be fixed. Pressure upward on the uterus usually causes pain, as well as does pressure over the mass.

On percussion, we obtain an area of dullness over the mass.

DIFFERENTIAL DIAGNOSIS.

Time forbids that I enter into the differential points of diagnosis, hence I shall have to content myself with mentioning the diseases for which this might be mistaken. The principal affections which we have to eliminate are:

Tumors of the uterus, tubes, broad ligaments, intestines, sacrum and ilium.

Appendicitis.

Intestinal adhesions.

Fecal accumulation.

Extra-uterine pregnancy.

Uterine displacement.

Parametritis.

Hæmatoma.

COURSE, PROGNOSIS, TERMINATION.

The outlook in these cases in anything but bright. In the acute forms, we may often check the advance of the disease, but the tendency is to become chronic, and it must be of rare occurrence that the tube is not more or less permanently injured. The woman may at any time have relapses, resulting from peri-salpingitis, and this is often brought about by any over-exertion. If the inflammation has closed tubes, sterility necessarily results.

The cystic varieties are incurable except by surgical measures. They make chronic invalids of their posses-

sors. The patient is likely to have attacks of peri-salpingitis from the least over-exertion. Hence she has constant relapses. The tube is liable at any time to rupture from over-distention, which will, in the case of a pus tube, result disastrously. Then, too, we may have fistulae established between the pus sac and rectum, vagina, bladder, bowel, or even ureter. Sterility is the rule.

TREATMENT.

The treatment of the acute forms must be largely symptomatic. The patient should have absolute rest in bed, a light diet, an ice bag or small blisters to the lower zone of the abdomen, hot vaginal douches, possibly local blood-letting, salines, and if required to relieve the pain, a hypnotic. The uterus, if it be the source of infection, should be cleansed, to cut off further infection. Electricity is of doubtful efficiency. If the case become threatening, and we fear that the accompanying local peritonitis may become generalized, we should resort to radical measures.

In the chronic forms, especially the purulent and hæmatic, we cannot hope to effect a cure by any means other than operative. Much has been done lately in the way of conservatism, but if we have large collections of pus, and the tube is much damaged, we should resort to radical operation. We sometimes do a salpingectomy for the relief of pain in the chronic paranchymatous variety, but this should always be made the last resort.

Pozzi very tersely sums the conditions demanding the extirpation of the appendage as follows:

1. "Ovaritis and salpingitis where there is every reason to suspect the urecence of pus.

2. Painful sclero-cystic ovaritis.

3. Chronic paranchymatous salpingitis and cystic (serous or haemic) salpingitis, where, in spite of the lesions being apparently slight, menorrhagia, dysmenorrhoea, or nervous reflex phenomena call for operation."

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ABSCESSSES, ADENOMAS, ADIPOSE TUMORS, ANEURISMS, CALLOSITIES, HEMORRHOIDS, TORTICOLLIS, SPECIFIC AND MALIGNANT DISEASES OF THE RECTUM, AND ULCERATIONS.

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(Continued from page 132.)

ELECTROLYSIS IN THE TREATMENT OF GOITRE.

Both poles may be inserted into the tumor, using only gold or platinum

needles with the anode, as previously directed. Also remember that if both poles be used in the tumor, that there must be a reversal of the current before attempting to remove the positive needles. The most common method is to use the cathodal needles only in the tumor, with the anodal pad at some indifferent point.

These needles were made by Mr. Otto Fleming, of this city, after patterns furnished by the writer, one set being made of steel embroidery needles and the other of pure platinum, all being mounted in heavy cord tips to which the conducting cords are firmly attached. Each needle is insulated with shellac to within one quarter of an inch of the distal end.

In operating upon a goitre, the parts are to be first washed with some antiseptic solution, and in most cases, a 10 per cent. solution of cocaine injected. Place a large anodal pad on the shoulder or some other convenient point, and quickly thrust two or more of the insulated needles, connected with the negative pole, into the tumor, keeping them not less than one quarter of an inch apart, and hold them in position during the passage of the current. Gently turn on the current until the meter shows twenty or even twenty-five ma., and allow it to flow for three to five minutes, when it should be as gently turned off and the needles withdrawn. If the tumor be very dense and unyielding, it may be difficult to introduce the needles, in which case press them through the skin and as much deeper as possible, turn on the current and use firm pressure upon them, when the electrolytic action of the current will allow of their being passed to any required depth. Repeat

the operation, in another portion of the tumor, in from five to seven days, according to the reaction. This method of treatment causes comparatively little discomfort, and is entirely safe. Of course, the punctures are to be treated antiseptically, the same as any other wound, so as to prevent infection from without.

The late Dr. W. F. Hutchinson advocated the use of long, fine, uninsulated needles in the treatment of these and other fibroid tumors. His theory was that the current would follow the lines of least resistance, thus not appreciably leaving the needles to attack the skin, but as more or less action takes place wherever there is a contact, it would be better to insulate in order to prevent any possible action on the skin.

Multiple Galvano-puncture has also been recommended for the treatment of goitre, but the resulting scars might become sufficiently pronounced to be seriously objectionable.

How does the current affect the tissues so as induce a cure? "All the tissues of the body have their origin in the primitive material which we term protoplasm. This protoplasm has certain movements which characterize its life, and these movements are affected by mechanical, chemical and electrical energy, differing in character; that by slight excitation by the induced, or faradic current, increasing the rapidity of the movements, stronger ones causing tetanic contractions, and numerous and powerful ones causing coagulation.

"The galvanic current causes dilatation and contraction of the bloodvessels, by direct stimulation of their muscular fibers, acting in like manner upon the lymphatics, causing a more

ready circulation of the blood and nutritive fluids; increased osmotic processes; changes in the disassimilation and nutrition of the nerves, on account of their stimulation or sedation; changes in the molecular arrangement of the tissues, caused by electrolytic processes, and, finally, the consequences of the mechanical transport of fluids from one pole to another." (Erb.)

The current undoubtedly exerts a more or less direct influence upon the trophic centres in the spinal cord, and upon the brain.

Experiments made by some investigators seem to prove that powerful currents from a heavy dynamo cause a disintegration of the red blood corpuscles, causing instant death. Others claim that there is no macroscopical or microscopical change in any of the tissues, but that death is due to a profound disturbance of the equilibrium of the system caused by shock, this latter view being promulgated by Dr. Homer C. Bennett.

The interpolar effects have been studied from two points. Dr. Ingliis Parsons and others, in acting upon fibroid tumors and other animal tissue, after removal from the body, detected no change in the interpolar region. Dr. Buckmaster however, clearly proved that there was absolute disintegration of the living cells by the interpolar action of a very strong current. He experimented upon the heart of an anesthetised dog, and showed the difference in result when acting with the current upon dead or living tissue.

Having seen, how, according to our present knowledge, electricity affects the living organism, we may partially comprehend how it may, if properly used, assist nature in throwing off disease. We may also learn that it is

not the powerful current or great shock to the system that is required to give this aid, but that as a rule it is the mild stimulation of sedation or both in turn that produces the best results.

CYSTIC VARIETY OF GOITRE.

In this variety the contents of the sac are to be evacuated and the cyst destroyed by galvano-cauterization, or by acting upon the contents before evacuation, as in the treatment of hydrocele, as a cure promoted by absorption. This latter procedure will not be successful, however, in an old cyst with thick, indurated walls. The technique of the operation is as follows: Use a trocar and canula, the latter being insulated with shellac. Thrust the instrument well into the sac and draw off about one fourth of the contents, deemed desirable, replace the trocar, and use as the cathode, the anode being at some convenient point, and turn on a current intensity of twenty ma., gradually increasing to thirty, if possible, and let it pass for fifteen to twenty minutes. There will be more or less distension of the sac, caused by the liberation of hydrogen gas, the result of the electrolysis. Allowance must be made for this, as a rule, by previously withdrawing a part of the contents, as above directed. Galvano-Cauterization: Tap the cyst, draw off all of the contents possible, and act upon the whole of the interior with a blunt metal or carbon electrode, using the cathode and a currency of fifteen to twenty ma., if it can be borne, but it will be better to give an anesthetic and do the work thoroughly, in which case a stronger current may be used.

Should there be malignant degeneration, the patient is to be etherized and the parts thoroughly acted upon

with a current of seventy five to one hundred ma., or the cautery knife applied, or better still, proceed according to the method of Dr. Massey, in the treatment of cancers.

Adenoma Fibroma of the Patotid may be acted upon much in the same manner as in ordinary goitre, but greater care must be exercised in placing the needles, on account of the close proximity of the great blood vessels.

When making applications in this region it must be remembered that the positive current causes contraction of the blood vessels, and the flow being lessened vertigo might result. While this may not be alarming, the patient, being in a state where every symptom is likely to be exaggerated, it will be advisable to explain the condition and reassure the patient.

It will also be preferable to make cathodal applications only, to this gland, and turn the current on and off quite slowly, as a sudden change of potential would induce vertigo.

ADENOMA-FIBROMA OF THE BREAST

The treatment of a fibrous growth, in this locality, will be practically the same as that already laid down for such tumors. If it degenerate into an adenoma-sarcoma, Dr. Massey's method, or that of Dr. Parsons, should be resorted to at once. The technique of the latter is as follows: required, a galvanic battery capable of supplying five hundred ma. or more; a suitable controller that will stand the heat of such a current, and two gangs of needles, four to six needles being in each gang. The patient must be placed profoundly under the influence of an anesthetic.

Bear in mind the necessity of using gold or platinum needles with the

anode. Everything being in readiness, thrust both gangs well into the tumor at its base, the anode on one side and the cathode on the other, the points approximating to within less than one inch of each other, the needles in each gang being kept about one half an inch apart. If the tumor be small, two needles will be sufficient. Having the needles in position, hold the cathodal gang in place and have an assistant turn on the current, rapidly bringing it up to the required intensity, and immediately remove a cord tip from a binding post, either cord will do, and rapidly break the current by tapping the tip on the binding post, thus sending powerful shocks through the tumor. Work rapidly, as the electrolytic action is great with such a strong current. Another good method is to use voltaic alternatives, i. e., by sudden reversals of the current by means of the pole-changer. These shocks may be repeated six to eight times, carefully observing the effect upon the heart of the patient.

The current should not be allowed to run, without interruption, or change, for more than five to eight seconds at a time, or, the action being great, a severe slough may result. The writer had this experience in one case, and fully recognizes the danger from the use of such powerful currents when localized. If the operation be properly and skillfully done, the tumor will rapidly disappear.

This method is especially applicable to parts remote from the nerve centres or the heart; although Dr. Parsons reports successful operations upon the left breast and axilla. Great care must be exercised, however, in using such powerful alternating currents near the heart.

WENS.

The writer has been frequently asked if ordinary wens could or should be removed by electrolysis. They could be cauterized and destroyed, but the better method is by ordinary surgical procedure. If malignant degeneration has taken place, electricity might be used, but not otherwise.

ADIPOSE TUMORS. LIPOMAS.

While these are classed as being benign, it is well to remember the caution previously given, and watch them. The secondary changes that are liable to take place in these tumors are calcification, mucoid softening, inflammation and adhesions from pressure. The writer has not used electricity in the treatment of lipomas excepting incidentally in giving general treatment. Others, however, have reported good results from electro-puncture.

ANEURISMS.

Classification. Aneurisms are classified as the fusiform; the sacculated; and the dissecting. (See the textbooks.) These distinctions must be borne in mind in diagnosing an aneurism, and as a guide to treatment.

Treatment. The location and probable extent should determine the precise method of procedure. An aneurism of the ascending aorta, for instance, could only be reached through the walls of the chest, and it may be stated that electrolysis offers the only surgical means of relief.

The popliteal space is perhaps the most frequent site of aneurism, but it must be differentiated from malignant disease of the bone, or a ganglion, which is not difficult, unless it has become diffused or broken down, in which case amputation may become necessary.

Having satisfied ourselves that the tumor is an aneurism, the patient must be laid prone and the limb elevated as much as possible. The battery being in readiness, apply the cathodal pad to the thigh or body, cleanse the space and have assistants make firm pressure upon the artery, both above and below the tumor. Quickly thrust two to four needles, connected with the anode, into the sac, turn on a current of twenty-five to thirty ma., and allow it to flow for twenty to thirty minutes. Take plenty of time. Let the tumor feel solid and firm before removing the needles, reversing the current for a few seconds for this purpose. The clot formed by the anode is dense and firm and the needles will be held by it, and if forcibly removed without reversal of the current, bleeding may follow. By such reversal the needles are released by negative electrolysis, as the clot formed by the negative is soft and yielding.

Before attempting to operate upon any tumor, one should practice with needles in freshly drawn blood; in egg albumen; meat and other coagulable substances, in order to become familiar with the action of the poles.

At the cathode will appear frothy, being filled with bubbles of hydrogen; while that at the anode will be firm and adherent.

It is not absolutely necessary to make pressure, as above directed, but if properly done it will facilitate the operation. The sac must be kept full, but if the pressure be intermittent, this may not be done, in which case it will be better to omit altogether, and depend on the anode to close the canal.

There is little danger of embolism when the anode is used, and the treatment of an aneurism wherever located,

may be practically carried out, as just laid down. The larger the sac, the more time it will require to form an adequate clot.

VARICOSE VEINS.

These may be acted upon in the same manner, as in the treatment of aneurism of an artery, and the vein obliterated, the anode being used. If the tumor be small, let the needles be insulated to within one eighth of an inch of the end, and insert but one at a time, using ten to fifteen ma. of current for a sufficient length of time to form a firm clot.

For Varicocoele, it has been recommended to make direct application of the galvanic current to the scrotum, including the varicosity between small electrodes which are firmly adjusted to the parts.

Static electricity is also of great value in the treatment of varicosities, both by insulation and sparks, with frequent alterations of polarity. These latter methods are preferable to galvanopuncture in the treatment of these conditions.

CALLOSITIES.—CORN, BUNIONS, ENLARGED JOINTS, ETC.

CORN.

These may be treated with the static spark; or, if very tender and painful, with the galvanic anode and cocaine.

Place the foot upon a wet foot-pad attached to the cathode, and apply the 4 per cent. solution of cocaine to the inflammation with the anode, using two to five ma. for five to ten minutes, once or twice daily. If an abscess has already formed, treat surgically, and apply the current to promote rapid healing.

BUNIONS.

These painful enlargements are

amenable to static sparks and galvanic applications with cocaine. If simply painful, a fine static spark, drawn through the shoe will suffice. Treat for ten minutes or more. In making the static application, a point in the center of the bunion will be found to be anesthetic. Concentrate the sparks at this point until the patient feels the current, when the sitting may close, to be repeated as often as may be necessary. Insulation is not necessary in these cases. The anodal spark has been used as a rule, but as it seems to be the rapid vibrations that are beneficial, either pole may be applied, but the machine must be run with a rapid motion.

If a bunion be very much inflamed, the galvanic anode, with cocaine, may be used to advantage until ready for the static spark.

ENLARGED JOINTS.—GOUTY DEPOSITS.

The writer has not met with the desired success in the treatment of these affections. The static spark has been used and lithium salts with the galvanic current, but so far, the results have not been satisfactory. Perhaps one reason for the failure of the galvanic applications with lithium has been that sufficient current to carry an appreciable amount of the medicament into the joints could not be borne by the patient. Neither were the sittings of sufficient length, as the patient gets tired, and treatment must be brought to a close.

The technique of the galvanic treatment is as follows: Immerse the joints, if possible, in a 30 per cent. solution of lithium citrate, or a 25 per cent. solution of lithium carbonate, attached to the positive pole of a galvanic battery, having a large cathodal pad on some convenient part of the body. Turn on

all the current that the patient will bear, and let it run for one half an hour, to two or more hours. I have not as yet found a patient that would submit to even one hour of such treatment. The point of greatest discomfort is at the edge of the water, and to relieve this as much as possible, place a bandage around the limb, letting it extend both out of and into the water, thus shading the current intensity. After the sitting, the parts should be bathed in dilute vinegar, and then washed in fresh water and some bland ointment applied.

(To be Continued.)

PAMPHLETS, ETC., RECEIVED.

The History of the Invention and the Development of the Ophthalmoscope, by Harry Friedenwold, M. D. Baltimore, Md.

Herman von Helmholtz, the Inventor of the Ophthalmoscope, by Casey A. Wood, M. D. Chicago.

Intratracheal Injections in the treatment of Bronchitis, by Willis S. Anderson, M. D. Detroit, Mich.

Report of the Health Department of Los Angeles, Cal.

Monthly Report of the Board of Health for the Philippine Islands and the City of Manila, for Feb. 1902.

Insufficiency of Divergence, as an Etiological Factor in Concomitant Convergent Strabismus. Its Importance, Determination and Treatment. By Herbert Wright Wootton, M. D., N. Y.

Smith's Osteopathic Physical Diagnosis Chart, A. M. Smith, D. O., Washington, D. C.

Our Osteopathic friends are good anatomists and pay particular attention to the nervous mechanism in their treatment of disordered conditions.

The chart before us gives a graphic and comprehensive view of the great sympathetic nervous system, even entering minutely into the structure of this complicated mechanism, as is shown by locating the "Parotid Plexus," a ganglion not mentioned in Gray's anatomy.

The chart is a most excellent one for reference and well worth a place in the physician's office.

Twenty-first Annual Report of the Executive Committee of the Civil Service Reform Association of Pennsylvania.

This Association is doing a most excellent work, and should receive the active support of every one desirous of purity in politics. The latter is possible, but only through the personal and proper attention of the individual co-operating with his fellows to that end. The integrity and perpetuity of our great republic is being imperiled and it behooves each member thereof to do his full duty at the polls in a conscientious manner, and to act with his fellows in every way possible to promote and maintain good government.

By sending your name to Mr. Robt. D. Jencks, 526 Drexel Bldg., Phila., and \$2.00 as membership fee, you will effectively aid the cause. We believe there are no other dues.

W. H. W.

DIAGNOSIS OF PROLAPSED KIDNEY.

A prolapsed kidney should be suspected in the presence of the following symptoms:

Palpitation of the heart.

Unusual fatigue on exertion.

Nervousness, restlessness and insomnia.

Jaundice which is transient and intermittent.

Acute attacks of pain resembling renal colic.

Inability to rest comfortably or to sleep on the left side.

Dragging pains in the loin, extending to the groin and down the thigh.

Epigastric pain to the left of the median line, or pain over the region of the heart.

Pain and tenderness over the region of the appendix, simulating chronic appendicitis

Irritability of the bladder, more pronounced during the day, or after standing or walking.

Chronic digestive disturbances, such as gastric irritability, persistent intestinal distention, repeated bilious attacks, etc.

Pain in the right ovarian region, which is sometimes misleading in the absence of other symptoms directing attention to the kidney.—*Philadelphia Medical Journal*.

TURPENTINE AS AN ANTISEPTIC.

According to the *Medical Record* glycerinated turpentine may be used with success as an antiseptic in the treatment of wounds. Dr. Kosso-budsk fills a sterilized bottle with glycerin and adds a small quantity of turpentine. This should be well shaken and allowed to stand for two days. Then he adds a small quantity of a 5 per cent. solution of hydrogen dioxid. It is then ready for use. As an antiseptic it checks excessive secretion when applied to wounds, relieves pain and swelling, and promotes the healing process. This action is thought to be due probably to the oxygen liberated, and partly to the properties of the turpentine.

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ORIGINAL ARTICLES of practical utility and length are invited from the profession. Accepted manuscripts will be paid for by a year's subscription to this journal and one hundred extra copies of the issue in which such appears if desired.

Editorial.

NURSES AND MASSEURS.

In choosing either of these occupations, there are certain indispensable requisites that are frequently overlooked. Among the first to be mentioned are good health, a good physique and adaptability. We have seen many early failures on account of the lack of these necessary qualities even though all the other qualifications were present, such as thorough training, devotion to duty, a good disposition, clean hands and a pure heart.

It is not an easy matter to acquire the proper training for either of the above branches. By this we do not mean that there are not well equipped places in abundance, where these arts are taught, but that there are compara-

tively few who are by nature, temperament and education fitted to take up such work.

We are frequently called upon by recently graduated nurses or masseurs, and even older ones, asking for a position, or the reference of cases. Many of these fall far short of our ideal of what a nurse or masseur or masseuse should be, judging from outward appearances only, and from these we must form our judgment in the vast majority of cases.

We often wonder how such candidates were ever allowed to graduate. They should have been either dissuaded from entering upon such a career, or denied admission to the training school. Better learn typewriting or go behind a counter or take a place almost anywhere else than in a hospital with a view to practicing as a nurse or masseur.

There are many noble and self sacrificing young men and women devoting their lives to such pursuits, and doing much good to themselves, as well as to their patrons. The trained nurse and the masseur are needed, but there are too many of both; there is not room for the numbers that are turned out. If the hospitals and training schools would exercise more discrimination in admitting candidates to their classes, it would be much to their credit, and result in good to all.

TOO MANY DOCTORS.

The trained nurse and the masseur may retaliate, or feel like doing so, by saying that the same criticisms apply to doctors, medical students and medical colleges. This we freely admit.

There are now over 135,000 physicians in the United States, and thousands are added to the number every year. A few succeed: the greater

number barely live, and many seek other occupations. Scarcely a day passes in which we are not called upon by a graduate in medicine, who is acting as detail man for some pharmaceutical or publishing house. It hardly pays to spend four years in a medical college, with the attendant expenses, in order to become a canvasser for drugs or books.

There are far more alluring and lucrative avenues open to the earnest young man, than the one leading to the practice of medicine. The same statement will also apply to the practice of law, as the same conditions prevail in that profession, as in our own.

W. H. W.

THE BORDER LINE IN LAPAROTOMY.

In some few of our best known and widely circulated exchanges, of late we have noted various contributions from the pens of distinguished members of the profession, who have set themselves to the task of defining or outlining the "border-land" between medicine and surgery, when that stage is reached in a given case, that the physician shall stand aside, and the surgeon shall assume responsibility; or to go a step further, draw a demarkating line between that class of cases, which from their onset, strictly belong to either domain of medicine; and let us here only class those cases as *surgical* which entail sanguinous procedures in their management; though in its correct sense, surgery implies a manual art, embracing the whole range of physics.

Evidently to anyone who has given the subject careful consideration, such

a division, though earnestly desired, is outside the realm of possibilities.

We are now in a fair way to estimate the limitations of operative-surgery in human accidents and disease; but since the reign of the *furor operatorie* set in, the rising generation of young practitioners has been so inoculated with the spread of "infection," a chill or sudden rise in the temperature that the first thought is an "operation."

In the domain of internal medicine, pessimism reigns; of the wonderful recuperative and readjusting powers of nature, but little is known. But the disillusional epoch has set in, and we have come to realize, that if we would build a broad, safe base for a rational therapy, in many directions we may turn back and into the retrospect; for many of the older measures are surely, but steadily coming back to supplant the new.

In no branch of surgery is this more obvious than in tuberculous or strumous diseases of the osseous system in orthopaedics. Experience has taught us to be cautious, how we open a cold abscess, or meddle with the arthritic structure of a growing child.

A noted eminent writer and operator of the most consummate skill, boldly ventures forth, to inform us of the "passing of a specialty," which we thought had hardly yet matured, though one, which was more prolific than any other for sanguinous surgery.

It often, is a most serious question to the conscientious practitioner to decide, when a patient is suffering from a malady tending towards death, which can promise him the longer and easier respite, the resources of medicine or the intervention of surgery?

In its broad sense there is no such thing as a "surgical disease" or even a

"medical" one. The former can only exist after medicine has failed. Some commit the grave mistake of regarding every description of non-surgical treatment as *palliative* evidently unmindful that medication may be most drastic in its action.

With this view of the dividing line, in a general way, we turn to abdominal section, to the division of that mysterious membrane, the peritoneum, by the skillful manipulation of which, the most extraordinary triumphs of surgery have been achieved.

With a patient of a moderate share of vitality and under a skillful, experienced hand, it is marvellous to note the singular tolerance and the powers of repair in this membrane and all the parts invested by it. And yet, notwithstanding all this, it is well not to overlook its prodigious powers of repair, nor the tendency to adhesions by the most trifling irritation of it.

In the greater number of cases calling urgently for relief, in disease or lesion within the peritoneum, the degree of exhaustion or shock is great.

It is idle to say that here, death is inevitable without laparotomy, while we all know; that in not a few cases it may remove the only possible hope of recovery.

The border-line is not a broad, nor so much in evidence in laparotomy as we might wish; and until it is, nothing but the most careful deliberation will justify us in rudely exposing and manipulating the vitals of the abdominal or pelvic cavities.

T. H. M.

OPHTHALMOLOGY

In charge of A. J. TENNEY, M. D., Boston.

Dr. Frederick C. Riley, (*Med. Rec.*) suggests a Maddox rod which any one can improvise at short notice. He fills a homeopathic vial with red liquid, and pastes paper with two slits in it around the bottle. The slits are placed vertically, and must be opposite to each other.

Dr. Roosa, (*Med. Rec.*) agrees with Dr. A. E. Davis that thirty per cent. of the cases of convergent strabismus can be cured without operation by the correction of astigmatism and hypermetropia under atropin. Dr. Roosa divides the interni for functional convergent strabismus, and the externi in divergent strabismus, having first stretched them according to Panas. He believes that amblyopia is often one of the factors in producing the trouble.

Dr. C. H. Baker, (*Jour. A. M. A.*) discusses the comparative merits of the cycloplegics. Atropin sometimes causes accommodative disability for fifteen days. It is said to cause glaucoma after 45, and there is some danger of systemic poisoning. Homatropin is less dangerous. Oliver, Chisholm, Savage, Jackson, Randall, Starkey, Risley, Wood and Ayers believe it to be reliable, while Stewart, Holt, Cotton, Noyes, Webster and Agnew insist that its action is uncertain. Duboisin is erratic and violent. With hyoscin accommodation was abolished in from 30 to 48 minutes. The solution used was five-tenths per cent. Accommodation returned in from 48 to 60 hours. In more than 2500 cases he never saw any evil results from its use. One instillation was usually sufficient.

There is no case on record where it has caused glaucoma.

Dr. Geo. S. Hull of Pasadena in the *Ophthalmic Record* lectures the eastern physicians for sending patients to the Pacific coast who should consult the home ophthalmic surgeon. He says: "It is surprising how many neurasthenics cross the country in search of health, who have uncorrected errors of refraction, which are the largest factors in their breakdowns." They are compelled by the sun's glare to consult the ophthalmic surgeon soon after their arrival, and when their eyestrain is relieved, their headaches, insomnia and other nervous disturbances disappear.

Dr. Carl Koller, (*N. Y. Med. Jour.*) describes a case of perforating wound of the sclerotic, near the insertion of the external rectus muscle. It had sharp edges, and had the shape of an obtuse angle with a retracted flap.

Each side measured a quarter of an inch, so the whole length was not quite half an inch. The vitreous body protruded, and the eyeball was soft but not collapsed. The anterior chamber was abnormally deep. The four-year old boy ran against the corner of a pane of glass lying on a table. The conjunctiva and Tenon's capsule were dissected, and sutures were taken through the entire thickness of the sclera, under general anaesthesia. The eye healed rapidly, and its appearance and function were perfect.

Suturing the sclerotic was first performed by the Italian, Baretti, in 1833. If there is a foreign body in the wound, if the sclera is extensively lacerated, or infection has taken place, suturing is of course out of the question.

Drs. Dwight and Germain, (*Bos. Med. & Surg. Jour.*) report four cases

of thrombosis of the cavernous sinus. There were chills, exophthalmos, limitation of eye movement, delirium and death. Dr. Dwight operated upon one of the cases, trephining the temporal bone as near the zygoma as possible, enlarging the opening, opening the dura, and lifting the temporal lobe backward and upward, opened the cavernous sinus with an incision half an inch in length. A rush of semiclotting blood followed, but the bleeding was readily controlled by the insertion of a narrow strip of gauze. The operation occupied but eight minutes. The pulse dropped 20 beats, from 140, and the temperature fell from 103 to 101. In four hours he began to fail, and died in six and a half hours after the operation.

Surgery and Surgical Pathology.

IN CHARGE OF

Dr. T. H. MANLEY, NEW YORK.

STENOSIS OF THE SMALL INTESTINE.

BY M. PATEL.

Prosector of the Faculty of Medicine of Lyons. *Revue De Gynaecologie Tome, IV, p. 85.*

We understand by multiple stricture of the small intestine, lesions produced at different points of its tract, engaging the walls, in the course of their evolution or cure, a reduction in calibre. We will eliminate those occlusions produced by bridles or bands, extra intestinal inflammatory or neoplastic, or stenosis resulting from displaced organs. Here obstruction is from extraneous influences.

Tuberculosis is the most frequent cause of multiple stricture of the small

intestine. In 1830 Corbin in making an autopsy on a case of acute tuberculosis, which was attended during life by symptoms of obstruction, found three strictures in the small intestine.

In 1844 and 1859 Peigu and Lencereau submitted similar observations. But the list of recorded cases up to 1880 was not large: till then, it was regarded as an anatomia-pathologic curiosity. Up to this date those reported were mostly of a bacillary origin. Meanwhile Erberth in 1867, and Forster in 1863 recorded instances of a luetic origin. Reinke and Wernlich reported cases in 1870 of syphilitic stricture of the intestine.

Surgery is resorted to, for the first time in their treatment, by Koeberle, in 1880, for tubercular stenosis of the small intestine. There were seven points of stricture. There was complete cure resulting. Later, we find Von Hacker, Frank, Trendelenburg, Koenig and Hoffmeister reporting cases successfully treated by Laparotomy. Of late the number of operations has largely multiplied.

ETIOLOGY.

We may divide these strictures into three categories. 1st. *Multiple congenital*, 2nd, *Multiple inflammatory*. 3rd. *Multiple neoplastic*.

Thorl records a congenital case of stricture of the jejunum and rectum. Inflammatory stricture of the intestine results from cicatrization of ulceration, the breach may be annular or oblong.

They have followed acute enteritis. M. M. Gerard Marchant and Demonlin have recorded cases of this character at the ileo-caecal valve.

Reach discovered 15 cases, on *post mortem* of multiple stricture of an indefinite character. These stenoses

may have their origin in typhoid or dysentery; this is the exception; they originate in tuberculosis or syphilis, or in simple inflammation.

Neoplastic stricture occurs most frequently in malignant growths; generally in those of advanced years. Solomon found multiple tumors in the small intestine of a man of 24 years. They led to numerous invaginations.

PATHOLOGICAL ANATOMY.

Seat: This varies according to the nature of the affection. According to Thorl, the congenital most frequently occurs in the middle of the small intestine. Syphilitic occurs at any point of the bowel. Hahn had one case wherein the narrowing occurred simultaneously in the small intestine and the rectum.

Tuberculosis seizes quite generally on some area of the ileum, beginning in the closed follicles. Often the ileo-caecal valve is affected. Again, we may have the entire ileum narrowed by linear cicatrization. The number of strictures varies. Many observers mention two, others all the way up to 30. In the *Syphilitic*, the number is considerable. *Cancerous*, Kuttner reports a case in which there are 18 strictures in the small intestine.

The microscopical characters vary according to the nature of the lesion.

T. H. M.

SPINAL TRAUMATISMS.

M. A. BONNET.

After an extended series of experiments on the spines of fifteen human cadavers, in which he induced various lesions by forcible flexion, he summarizes as follows: "The results furnished by my experiments appear to

emphatically force on us the following conclusions:

(1) Very forcible movement of the spine acts with the greatest destruction on these segments which possess the greatest mobility, the exception being in the upper cervical region; at this point the atlanto-axial junction which possesses very great strength.

(2) In the cervical region, forcible flexion induces the greatest damage to the lower vertebrae. This is most notable after extreme rotation of the neck. In the dorso lumbar region, the effect of extreme flexion is generally sustained by the eleventh and twelfth dorsal vertebrae, as well as the first and second lumbar, particularly the first lumbar.

(3) Incomplete and permanent luxation of the vertebrae with a tearing off, or laceration of the muscles and ligaments, without fracture of the bones is observed only in the cervical region, when the injury has been induced by extreme rotation; violent movement from any direction in the lumbar region, is invariably followed by fracture of the vertebrae.

(4) The short deep muscles which encircle the rachidian-tube suffer damage most frequently. Surface ecchymosis and extravasation of blood in the surrounding tissues and in the vertebral canal exist in nearly all cases. The spinal marrow—the cord is seldom lacerated.

(5) In luxation of the apophyses of the cervical vertebrae, the extent of laceration is not so considerable as to interfere with reduction of the displacement. This has been effectively practiced by Desault and others after him.

(6) Those chronic diseases of the spine, designated "Pott's disease," most frequently affect the last dorsal or the

first lumbar, violent flexion being one of the most active causes.

Violent movement cannot be regarded as a cause of the ankylosis which we sometimes discover between the atlas and the axis. In Louis' memoir, we note that he regards violent movement as among the principal causes of spinal-fracture, this occurring most commonly in the lower cervical, or the dorso-lumbar regions.

In Dupuytren's "Leçons orales," we note essentially the same conclusions.

NOTE: Bonnet directs our attention to an organ of the greatest importance, in the human body; and yet there are but few of us who possess even an elementary knowledge, not only of its pathology, but its architecture or its functions. The vertebral canal is a tubular chain, a pyramid and mast.

The cord begins in the oblong-medulla, the bulb, and extends down to the first lumbar-vertebra. All the nerves of sensation and motion, and the nerves of special sense, except four pairs, arise from ganglia in the spinal-cord.

Experimental research combined with an extended clinical experience, conclusively demonstrate that fracture of the spine may occur without implication of the cord. It is often impossible to discover it, by symptoms. Repair is usually rapid. T. H. M.

Connecticut Laws for Inebriates.

"The managers, trustees or directors of any inebriate asylum established by the laws of this state may receive any inebriate or dipsomaniac who shall apply and be received into such asylum, retain him one year and treat and restrain him in the same manner as if committed by the Probate Court."

Society Meetings

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopedic Surgery.

(Meeting of April 18, 1902.)

GEORGE R. ELLIOTT, M. D., CHAIRMAN.

Dr. J. H. Waterman presented the case of a child with congenital elevation of the left scapula. The X-ray revealed the condition of elevation and also a bony plate running from the spine of the scapula to the seventh cervical or first dorsal vertebra. The advice of the Section was asked as to treatment. It was stated that Wilson, of Philadelphia, had reported two cases treated by operation. In standing, the elevation of the shoulder was marked and the head was held slightly inclined to the left side.

Dr. Russell A. Hibbs said he had observed a similar case in a subject 25 years old showing also a plate of bone connecting the scapula and the seventh cervical or first dorsal vertebra. He advised operation in the case presented by dividing the bony attachment.

The Chairman wished to know what was done in the cases referred to, after division of the bony plate of attachment to prevent reunion.

Dr. S. A. Twinch stated that he had witnessed the operation of Dr. Wilson referred to and that no steps had been taken to prevent reunion.

CONGENITAL DISLOCATION OF THE HIP.

Dr. Royal Whitman presented a series of ten cases illustrating the treatment of congenital dislocation of the hip. The cases were of interest as demonstrating the curability of the affection.

In the entire number there has not been a relapse since treatment had been discontinued. With one exception the patients had been operated upon by the bloodless method of Lorenz, slightly modified in certain instances. At the present time, as would be evident upon inspection, it was impossible to say which limb had been treated.

The record of the cases is as follows:

1. C. P., female, dislocation of the left hip, operated upon at the age of nineteen months, April 19, 1897. The plaster bandage was removed on October 12, 1897.

2. O. H., female, dislocation of the left hip, operated upon at the age of five years, May 20, 1897. Plaster bandage removed March 15, 1898.

3. L. S., female, dislocation of the left hip, operated upon at the age of nineteen months, November 15, 1897. Plaster bandage removed June 15, 1898.

4. C. F., female, dislocation of the left hip, operated upon at the age of two and a half years, October 11, 1899. Plaster bandage removed June 2, 1900.

5. A. C., female, dislocation of the right hip, operated upon at the age of two and a half years, January 28, 1900. Plaster bandage removed August 9, 1900.

6. V. R., female, congenital dislocation of the left hip, operated upon at the age of four and a half years, January 31, 1900. Plaster bandage removed August 22, 1900.

7. E. R., female, dislocation of the left hip, operated upon at the age of two years, May 22, 1901. Plaster bandage removed September 13, 1901.

8. F. C., female, dislocation of the

left hip, operated upon at the age of four years, July 2, 1901. Bandage removed January 7, 1902.

9. M. L., female, dislocation of both hips, operated upon at the age of two years, May 10, 1899. Plaster bandage removed November 10, 1899. A perfect cure on the right side, not perfect on the left.

10. M. A., female, dislocation of the left hip, operated upon at the age of five years, October 30, 1900, by arthrotomy, without excavation of the acetabulum. Plaster bandage removed October 10, 1901. Perfect cure.

Dr. Whitman said that Case No. 5 had been of much interest. On removal of the spica bandage a limp had persisted for many months accompanied by slight outward rotation of the foot. If the limb were rotated slightly inward the X-ray picture showed an apparently normal joint. The persistence of the limp was due apparently to laxity of the capsule and to slight anterior twist of the upper extremity of the femur. To his surprise the child had steadily improved and at the present time, more than a year and a half after the discontinuance of treatment, there was practically no trace of disability.

In case No. 9, the bilateral displacement, the left hip was originally recorded as a transportation, but after a lapse of nearly two and a half years there was no shortening and but a very slight limp. The head of the bone was apparently secure in a position slightly anterior and external to the normal. This result was far better than after the ordinary transportation in which there was always a certain amount of shortening and a characteristic limp.

The case in which arthrotomy was performed was not only of interest as showing the perfection of the cure obtained by this method, but also in that the patient is one of three children of one mother, each having congenital dislocation of the left hip. The eldest child, now about eighteen years of age, was untreated and presents a shortening of the limb of three inches. The second child, after three unsuccessful attempts by the bloodless method, was operated upon by the Hoffa Lorenz method with evacuation of the acetabulum on October 25, 1898, at the age of five years. The final result was very satisfactory.

Dr. R. H. Sayre considered that the result of the cases presented a great advance in the treatment of congenital dislocation and that a few years ago such a collection of successful cases would have been impossible.

Dr. George R. Elliott said the remarkable showing of good results by Dr. Whitman ought to fully answer those still skeptical about the non-cutting operation. He noticed that the patients were all apparently under four years of age at time of operation. A very large percentage could be cured at that age.

The Lorenz method, even if it did no good, certainly did no harm, and in older cases, warranted its use before cutting was resorted to.

He further said that it could usually be determined at time of operation what the final results would be, at least such was his experience.

He asked Dr. Whitman what percentage of his operations showed failure, and if he reduced both hips at time of operation in double congenital hip dislocation.

Dr. Whitman stated in the case of

bilateral displacement both hips were treated at one sitting. He said that he had modified the Lorenz method somewhat, in that he usually extended the plaster bandage below the knee, the leg being flexed upon the thigh at a right angle with the object of fixing the part more securely. At the end of two months the leg portion of the bandage was removed. In certain instances the femur was rotated slightly inward, in order to fix the head of the bone directly beneath, or slightly internal to, the femoral artery. He had on other occasions stated that not more than twenty-five per cent. of the cases were cured by this method, but the indications in his later operations were much more favorable. He did not agree with the statement of the last speaker that the result of treatment could be foretold at the time of operation. In many instances an anterior twist of the upper extremity of the femur made failure inevitable, and in many instances arthrotomy and osteotomy would be essential, excavation of the acetabulum being reserved for exceptional cases.

COXA VARA.

Dr. Whitman presented a boy about seven and a half years of age, illustrating the cure of coxa vara by cuneiform osteotomy and at the base of the trochanter. The patient had been presented to the Section at a previous meeting by Dr. Taylor. According to the mother's account, he had limped ever since he began to walk. Although the operation was performed but five months ago, the functional cure was perfect.

ALCOHOLIC ARTHRITIS.

Dr. Elliott presented the case of a boy aet. 12 years, who some three years ago began to have swelling of

the joints of the fingers and wrist. The right wrist, the distal joints of the fingers of both hands and the distal joints of the first and second toes were involved. The liver was enlarged, projecting below the umbilicus, the spleen was enormously enlarged and there was only a slight enlargement of the lymphatic glands.

The mother stated that the boy having been badly nourished she had given him whisky daily for about one and a half years. He regarded this as the etiological factor of what he thought could rightly be designated Alcoholic Arthritis.

Arthritis deformans was excluded since that grows progressively worse and is not accompanied by enlarged spleen. Under proper nourishment and little general medication the symptoms had nearly all disappeared—Heberden nodes still persisted something very rare in children.

DESTRUCTION OF THE LOWER EPIPHYSIS OF THE TIBIA.

Dr. Hibbs presented the case of a boy aet. 11 years first seen, October, 1900, with deformity of right tibia following a severe fall supposedly resulting in fracture. The deformity was corrected by osteotomy. He suspected that the lower epiphysis of the tibia had been injured and this was corroborated by the recurrence of the deformity after operation.

At time of operation the right tibia was 12 1-8 inches long and the left thirteen. If left untreated the deformity would progress. Members of the Section were asked if they had any experience in the treatment of such cases by destruction of the epiphysis of the fibula.

Dr. Whitman said that a member

of the American Orthopaedic Association had made the statement at its last meeting that he suffered from a disability similar to the case reported, that his fibula was two inches longer than the tibia yet the disability and deformity were so slight that from his personal experience he had advised against operation on such as had been suggested.

Dr. Sayre said he thought destroying the epiphysis of the fibula as suggested by Dr. Hibbs would not result in as usual an extremity as by leaving the limb untreated since it would produce considerable shortening—he suggested slitting the tibia lengthwise, sliding the pieces past each other and so lengthening the tibia sufficiently to bring the articular surfaces parallel with the ground.

Dr. Hibbs also presented a child aet. 3 years when first seen by him in October, 1900. One month previously it had been operated upon in a general hospital for osteomyelitis of the lower end of the right femur. This was followed by complete paralysis of the quadriceps extensor. This paralysis persisted with no response to either electrical current. No other muscle was affected and it was believed to be due to division of the tendon or muscle with failure to unite.

FRACTURED VERTEBRAL COLUMN.

Dr. Elliott presented a specimen of a fractured vertebral column removed from a man aet. 29 years, first seen in 1897. One year prior to that he attempted to hold a quarter of beef which had slipped from its pin and immediately felt a severe pain in his back. He remained in bed one week. He then attempted to go about and did so for one year with gradually increasing

motor and sensory paralysis of both lower extremities, and there developed a marked kyphosis at tenth dorsal vertebra. Plaster jacket did not improve matters. The paraplegia became complete.

He was subsequently operated upon by Dr. Gerster at the Mount Sinai Hospital and evidence of fracture was found with bony fragments pressing upon the cord. These were removed, but Dr. Gerster expected no benefit to result. Patient finally died and the cord was found completely severed. Deep reflexes lost.

The progressive nature of the paralysis and the absence of involvement of the bodies of the vertebrae with a well marked kyphosis were interesting features, and also the faulty diagnosis of caries which at one time had been made. The angular prominence simulated the "Bos" of Pott's Disease very closely.

Dr. W. M. Leszynsky considered the history of the case very interesting and thought that it was hardly probable that anyone from the history would have made a diagnosis of fracture. He thought there was a slight injury to the cord and dura which set up a myelitis secondarily, becoming finally complete with ultimate destruction of the cord. It was well established now that complete division of the cord produced loss of all reflexes below the site of section. He cited a case of his own of a patient who had fallen from a height of twenty feet, fracturing the tenth, eleventh and twelfth dorsal vertebrae with immediate paralysis and complete loss of reflex action, sensory and motor power. The diagnosis was readily made in that case and confirmed at autopsy.

EARLY TREATMENT OF DISABILITY FOLLOWING INFANTILE PARALYSIS.

Dr. A. B. Judson reported a case of varus of the left foot in a boy of five years. Leverage by braces cured the varus but could not remove paralysis of calf muscles and calcaneus. The riser was omitted from the inner side, where it had given leverage against the varus and the upright was made of one piece with the tread which was shaped to the instep and could readily be bent down or up as the boy required more or less "toe" in walking. With this brace (exhibited) walking was without a trace of lameness. Deformity had been prevented and fibres developed which without early locomotor activity would have disappeared.

Dr. Charles H. Jaegar presented specially made gouge devised by a French surgeon for purpose of scooping out the acetabulum in operation for congenital dislocation of the hip.

TUMORS OF HEAD AND FACE.

THE HEAD.

New-growths over the cranial walls, of any description, are comparatively rare; malignant tumors are almost never seen here; wens, sebaceous or serous cysts are, however, not very infrequent. But even these seldom occur except in those past middle life as a rule; nor am I aware that they ever undergo malignant changes. One case of a large fungous fibro-cystic tumor of the scalp has come under my care in an aged, retired clergyman. It was destitute of a hairy covering, and was so eroded on the surface that it bled freely on the least friction. On excision the parts healed kindly.

Gummatous tumors of the scalp, or

those lodged in the diploë spaces, are not infrequent in specific disease. The scalp is a very highly vascular structure and prone to erysipelatous invasion, in wounds and operations on diabetic patients.

Nævoid tumors of the scalp are not very infrequently seen in infants. This form of angioma tends toward spontaneous dispersion in nearly all cases.

Although *lipoma* is almost invariably a *subcutaneous* growth, one rarely or never encounters it in any part of the scalp; possibly the general absence of fat in the connective tissue elements may explain this circumstance.

THE FACE.

Small, non-malignant growths involving the glandular elements of the cutaneous envelope of the face are quite common; they are mostly congenital moles, papillomata, or sebaceous cysts. The latter, under the designation of chalazia, often involve the Meibomian glands in the subconjunctival tissues of the upper eyelids. These diminutive nodules scattered over various areas of the face are obnoxious, rather as a cosmetic blemish, than for ever being a source of convenience, except occasionally after middle life when the papillomata may degenerate into malignancy. Angiomata of the various types may occupy any area of the face, and unlike those of the scalp, they tend to age to augment in area and never undergo spontaneous dispersion. Lipoma, teratoma and cystic neoplasms are uncommon over these exposed parts, at least, in early life.

Malignant growths of the facial structures are clinically of three varieties: 1st, those invading integumental structures; 2d, those occupying the lower lip, and 3d, those forcing their

way through from from the underlying osseous parts. In periosteal sarcoma of the facial structures a tumor may attain enormous dimensions without inducing gangrene or ulceration of the integument.

Labial epithelioma presents some remarkable peculiarities. I have never seen a case in which this type of epithelial hyperplasia involved the upper lip. It is uite invariably restricted to the male sex, as is esophageal cancer. Its *permanent* destruction in the early stages is simple and certain, in early all instances, without any description of cutting operation. The simultaneous turgescence or infiltration of the submaxillary glands present in many of the cases, arises rather from a transmitted irritation by the absorbent vessels than by a consecutive epithelial dissemination, as is commonly thought, because when the local ulceration is once soundly healed this adenoid tumefaction promptly vanishes.

Lupoid growths present many of the clinical aspects of malignancy.

MANLEY.

INTERNATIONAL JOURNAL OF SURGERY.

At the Schering and Glatz Exhibit in Saratoga visitors will find many new remedies of great therapeutic value. Among them are:

Urotropin, which, after 8 years of clinical employment, has achieved a unique position as a urinary antiseptic and uric acid solvent, and has been found the most reliable remedy in the treatment of cystites of all kinds.

Chinotropin, or Quinate of Urotropin, a recent addition to the medical armamentarium, recommended by Dr. De la Camp of the II. Medical Clinic of Berlin University as the best gout remedy we as yet possess.

Creosote Carbonate and Guaiacol Carbonate von Heyden, which, unlike the beechwood creosote and liquid guaiacol, do not cause chronic inflammation of the mucous membrane of the digestive tract; hence large doses can be given with impunity and remarkable results, have been obtained in phthisis pulmonum and the various pneumonias. Their value has been attested to by such eminent authorities as Profs. Dujardin-Beaumetz, Leyden, Andrew H. Smith, Wm. H. Thomson, Leonard Weber, James Tyson, Cornet, Kobert, and many others.

Collargolum and Unguentum Crede, efficient blood and tissue disinfectants causing no local reaction, which have been employed with brilliant results in sepsis of the most varied kinds

Xeroform, an odorless, non-poisonous and non-irritating desiccating agent of powerful anti-bacterial properties, which has been very satisfactorily employed in place of iodoform.

Schering's Glycero-Phosphates, which will be represented by the Lime and Iron salts, now also furnished in the convenient form of 5-grain tablets.

Beta-Eucain, a local anesthetic possessing none of the disadvantages of cocain, being only one-fourth as toxic and less irritant. Its solutions are permanent and can be boiled as often as is required, and its cost is much less than that of cocain.

Schering's Formalin Lamp and Formalin Disinfectant, which fulfill the requirements of an ideal method of Disinfection — Efficiency, Simplicity, Safety and Economy. By Schering's method 100 per cent. of pure, active formaldehyde gas is produced rapidly and continuously, in a true gaseous, superheated form, and is mixed with the watery vapor produced by the com-

bustion, which prevents polymerization.

Orphol, a neutral and non-toxic intestinal disinfectant, indicated in all the fermentative gastro-intestinal processes, in ptomaine poisonings, etc.

Sublamine, a non-irritant surgical disinfectant for the hands and skin, fully equal to sublimate in bactericide action, and of far greater penetration; it can be employed in concentrated solution, when necessary, as when the hands have come in contact with highly infective material, and is a general antiseptic and parasiticide for employment in gynecology, dermatology, etc.

Glutol-Schleich, or *Formalin-Gelatin*, which, in contact with living cells, is slowly decomposed, giving off formaldehyde, and acts as a homogenous occlusive dressing.

Schering and Glatz extend a cordial invitation to the members of the American Medical Association to call at their booth, where their other preparations, such as Trikresol, Levulose, Eupphthalmin, etc. will be on exhibition, and where samples of some of them may be obtained.

GLUTOL IN PREVENTING PITTING OF SMALLPOX

John Moir, in an extract occurring in *London Lancet*, states that Glutol is a whitish powder, prepared by exposing sheets of gelatin to the vapor of formalin. The solvent action of Glutol is facilitated by the addition of lard and by application the gelatin is dissolved and formalin liberated. He recommends it in suppurative conditions of the mouth, gums and tongue; carcinoma; tuberculosis; severe burns and chronic ulcers. But he especially recommends it mixed as follows as a preventative of severe pitting and deep scars from smallpox.

R. Glutol, $\frac{1}{2}$ oz. to 1 oz. 15-30 grms.

Paraffin (soft) 4 oza. 120°

M. Sig. To be applied locally.

The same proportion has been employed in carcinomatous and epitheliomatous cases as well as in severe burns. It is entirely harmless as an application in diseases of the mouth, even when swallowed in considerable quantities. It has been employed by others with marked success in the treatment of warts, chancroid growths and in syphilis vulgaris, although it took more time than most remedies; but it was easily handled, did not cause pain and left no scar.

(*Journal of the American Medical Association*, May 17th, 1902.)

CLINICAL THERMOMETERS.

We are in receipt of an antiseptic Thermometer case, with thermometer, from the Norwich Pharmacal Co., Norwich N. Y.



The case is of strong glass, in which is placed any desired solution, the thermometer resting in the same while in situ. This assures proper asepsis at all times, which should commend the combination to every physician and nurse. The use of such an instrument is also pleasing to the patient, and we commend the combination to our readers.

W. H. W.

BURNS OF INFANCY AND CHILDHOOD.

When more than one-third of the cutaneous covering is involved in a severe burn the outlook is unfavorable. Aromatic spirits of ammonia is highly recommended to meet the indications of vital depression. Unless the child is too young for the drug to be used at all, opium in doses proportionate to age may be employed until a quieting effect upon the system is secured. Picric acid, as a local application, in a one per cent. watery solution, has the effect of giving almost immediate relief from pain, and healing takes place rapidly under its use. It is best not to remove the dressing next to the skin, but simply wet this with picric acid and apply your absorbent cotton over this. By not changing the inner layer of dressing the pain is greatly diminished, and the danger of outside infection is greatly reduced. Iodoform is objectionable, both from its odor and the danger of iodoform dermatitis. A permanent bath offers one of the best means of securing comfort in the deeper and more extensive burns. For soothing purposes the old carron oil is the best known and the most extensively used.

QUININE AS A DRESSING.

Reid, (*Lancet*, February 15,) uses quinine and cod-liver oil with good results (one drachm to eight ounces in emulsion, to be shaken up before being used) in tertiary and rheumatic ulcers of the leg and for ordinary ulcers, in a case of gangrene of the skin, and after a burn, where a large surface (about a foot square) formed a slough and had to be re-

moved as ulceration loosened the thick slough. All wounds took on a healthy and kindly action, and the pus from the sloughing derma smelled sweet and contained a limited number of cocci. The dressing has nothing to recommend it in the way of cheapness or of odor, but it has the advantage of supplying a weakened system with an oily food and a tonic drug. For intertrigo, he has used it with good effects if not long required. For eczema, it seemed to act well if stomach troubles were seen to.

WHY COCA IS A PANACEA.

How many of our readers appreciate the true value of Coca as an all round remedy! Not Cocoa, from which Chocolate is made, but Coca, from which that potent substance Cocaine is produced. It requires one ounce of Coca leaves to make one grain of pure Cocaine, and that alkaloid is but one of many contained in these marvelous leaves. It is because of the modified action of all the constituents that the whole drug is possessed of different therapeutic properties, and is specifically greater than any one of its parts. Coca is a nervous-stimulant, acting primarily on the cerebral cells, but in this action having an elective affinity for the respiratory center and a chemico-physiological depurative influence on the blood. It is from this latter cause that Coca has such a widespread usefulness, which seemingly classes it as a panacea for all ills. With a purified blood stream, the organs of assimilation and the muscular and nervous systems are not only repaired, but maintained in equilibrium.

Unlike any other nervous stimulant Coca is not followed by depression,

though in full doses a brief period of depression may precede its physiological action. This indicates the employment with Coca of a diffusible stimulant which after an evanescent period speedily gives place to the influence of the drug. The difference between the action of alcohol and Coca is well illustrated in the anecdote of the Andean Indian, who, given a first taste of whiskey and asked his idea of its effects compared with Coca, replied:—"Coca helps a man to live, but whiskey makes him row a boat."

—(*Mortimer's Peru: History of Coca*, p. 224.) Thus the combination of wine with Coca such as in the well known Vin Mariani, is not only purely scientific, but a commendable preparation that presents an agreeable means of exhibiting the positive merits of properly preserved Coca.

A POWERFUL DIURETIC.

Although the *materia-medica* abounds in drugs having a diuretic action but few of them can be considered pure diuretics, the majority producing their effect in an indirect manner. Among the pure diuretics theobromine has been extensively employed in late years in the form of the salicylate. This preparation, however, is not free from irritating effect upon the gastro-intestinal tract owing to the contained salicylic acid, and for this reason Dr. Impens, of Brussels, after considerable experimentation succeeded in producing a double salt of theobromine sodium and acetate of sodium, to which the name agurin has been given. This preparation has been made the subject of extensive clinical studies in the clinics of Professors von Litten, of Berlin, Destree, of Brussels, Buch-

wald, of Breslau, and von Ziemssen, of Munich. The results of these tests have shown that in the dropsy of cardiac disease, agurin is a prompt and reliable diuretic free from any irritating effects upon the digestive organs or kidneys, while in some cases of ascites due to cirrhosis of the liver and in cases of edema from chronic interstitial nephritis, without marked destruction of the renal epithelium, the drug acted efficiently. The diuretic value of Agurin is further confirmed by some conclusions presented by Dr. A. C. Barnes, (*Medical Record*, May 24, 1902) in a discussion before the American Therapeutic Society, according to which the acetates form double salts with theobromine which are soluble and are powerful diuretics, of which agurin is a type.

GASTRALGIA—ITS TREATMENT.

Gastralgia is, for therapeutical purposes, divided into two groups by Professor Saundby (*N. Y. Medical Journal*)... The first group comprises those cases in which pain occurs independently of eating, and the second group, those cases in which the pain occurs after food is taken. The treatment of the first class consists of change of scene, a sea voyage or mountain air and abundant food at regular intervals. The palliative treatment consists of iron, quinine, arsenic, nuxvomica and the mineral acids.

For the second class, the treatment is, rest in bed, milk and lime water in sufficient quantities, say, an ounce every hour. A nutrient enema of one egg, beaten up in four ounces of milk, to be given every four hours. The amount of milk should be increased with improvement, and if milk fails, from two to four ounces of lightly

cooked minced meat may be substituted.

For the relief of the pain in both cases, Saundby gives morphia or heroin, but in a recent clinical report Professor Boone, College of Physicians and Surgeons, St. Louis, states that he finds one Antikamnia and Heroin Tablet (5 grains Antikamnia; 1-12 gr. Heroin Hydrochloride) given as required, not only relieves the pain, but prevents its recurrence, much more satisfactorily than either heroin or morphine alone. In other respects he concurs with Professor Saundby in his method of treatment.

CHANGES IN THE MEDICAL CORPS OF THE NAVY.

Week ending June 7, 1902.

June 3. Surgeon H. T. Percy, detached from the Naval Recruiting Rendezvous, Philadelphia, Pa., and ordered to the Indiana.

Surgeon C. Biddle, detached from the Indiana, and ordered to the Naval

Recruiting Rendezvous, Philadelphia, Pa.

Surgeon John W. Ross, retired, relieved from duty with the War Department in Cuba, to take effect June 15th, and to report to the Navy on that date.

Week ending June 14, 1902.

June 7. Surgeon J. W. Ross, retired, detached from duty under the War Department at the hospital Las Animas, Havana, Cuba, and ordered home.

June 12. Assistant Surgeon E. M. Brown, ordered to the Naval Hospital, Mare Island, Cal., for duty.

Week ending June 21, 1902.

June 13. P. A. Surgeon, J. B. Dennis, detached from the Naval Academy and ordered to the Hartford.

June 14. P. A. Surgeon, R. S. Blakeman, detached from the Hartford and ordered home, and granted 3 months sick leave.

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